Multiplication and Division

Challenge Cards

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How many multiplication and division sentences can you write using the numbers:

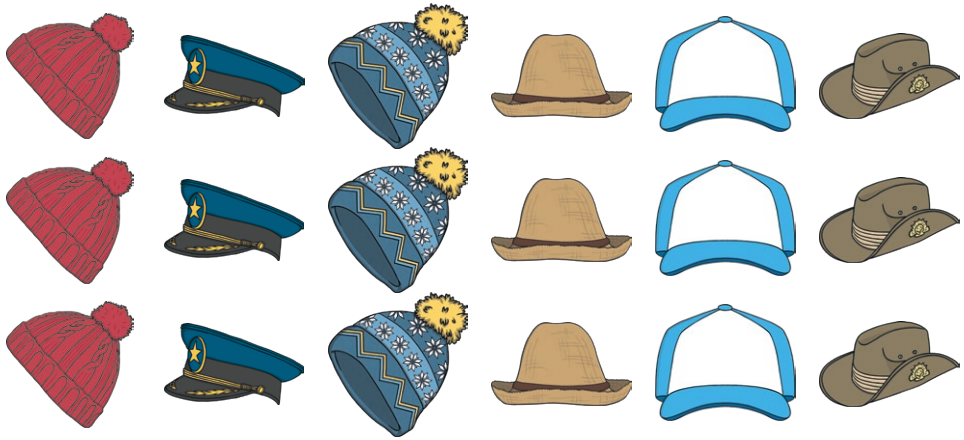
5 30 6

- Can you draw an array to match what you have written?
- Can you write a word problem for one of the sentences?

Matilda says multiplication can be done in any order, but division cannot. Is she right?

Can you give a reason for your answer, using number sentences or pictures?

Can you write a multiplication and a division sentence for what you see here?



Can you write a multiplication and a division sentence for what you see here?

If $10 \times 5 = 50$

then $5 \div 10 = 50$

Do you agree?

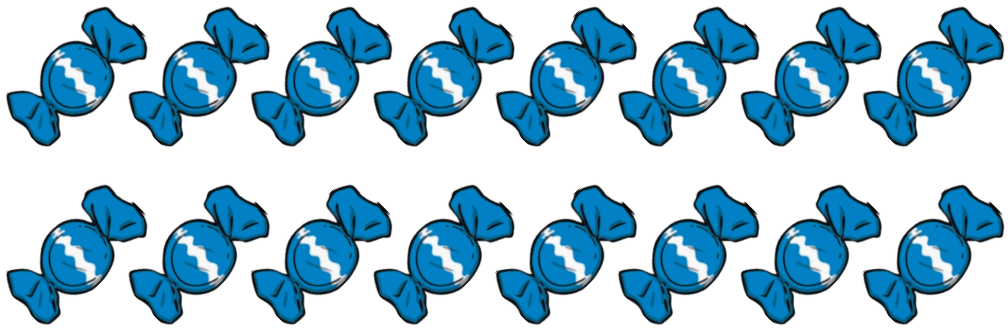
Give a reason for your answer.

Can you fill in the gap?

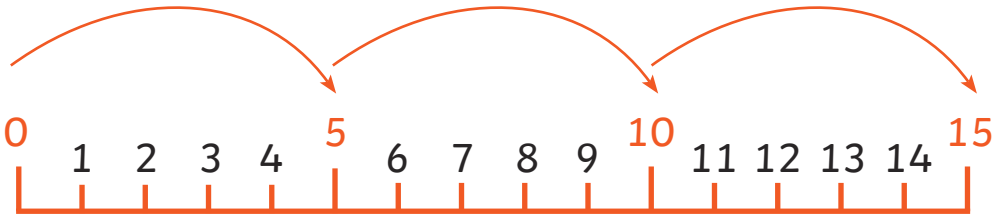
$10 \times 2 = 5 \times \square$

Can you write a similar sentence for a friend?

How many multiplication and division sentences can you write for this array?

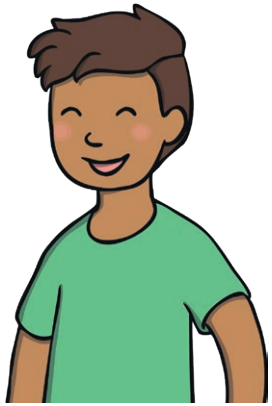


What number sentences can you write for what you see on the number line?



Zahid says if he multiplies an odd number by an odd number, the answer will be even.

What do you think? Back up your answer with evidence.



How can I get an odd answer when I multiply?

Explore, and explain your thinking.

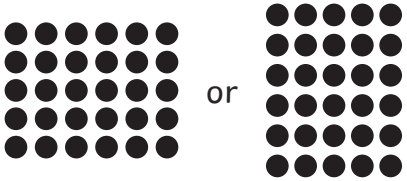
How quickly can you finish this pattern?

$1 \times 5 = 5$

$2 \times 5 = 10$

Can you also say the facts as divisions?

Multiplication and Division Challenge Cards **Answers**

Card	Answer
1.	How many multiplication and division sentences can you write using the numbers:
	Can you draw an array to match what you have written?
	5 × 6 = 30 **6 × 5 = 30** **30 ÷ 6 = 5** **30 ÷ 5 = 6**  or
	Can you write a word problem for one of the sentences?
	Example answers: There are 5 apples in each box and there are 6 boxes. How many apples are there altogether? 5 × 6 = 30 There are 6 apples in each box and there are 5 boxes. How many apples are there altogether? 6 × 5 = 30 Sam has 30 apples and he shares them equally into 5 boxes. How many are in each box? 30 ÷ 5 = 6
	Ava has 30 apples and she wants to put 6 in each box. How many boxes will she need? 30 ÷ 6 = 5
2.	Can you give a reason for your answer, using number sentences or pictures?
	Matilda is correct. For example: 2 × 4 = 8 and 4 × 2 = 8 but 8 ÷ 4 = 2 and 4 ÷ 8 = $\frac{1}{2}$
3.	Can you write a multiplication and a division sentence for what you see here?
	3 × 6 = 18 **6 × 3 = 18** **18 ÷ 3 = 6** **18 ÷ 6 = 3**
4.	Can you write a multiplication and a division sentence for what you see here?
	5 × 5 = 25 **25 ÷ 5 = 5**
5.	If 10 × 5 = 50 then 5 ÷ 10 = 50 Do you agree? Give a reason for your answer.
	No, I disagree. 5 divided by 10 does not equal 50. For example, you can't share 5 sweets equally with 10 children. **10 × 5 = 50 so 50 ÷ 5 = 10 and 50 ÷ 10 = 5.**

6.	Can you fill in the gap? 10 × 2 = 5 × __ Can you write a similar sentence for a friend?
	10 × 2 = 5 × 4 **20 = 20** Accept other balanced number sentences using multiplication or division.
7.	How many multiplication and division sentences can you write for this array?
	2 × 8 = 16 **8 × 2 = 16** **16 ÷ 2 = 8** **16 ÷ 8 = 2**
8.	What number sentences can you write for what you see on the number line?
	5 + 5 + 5 = 15 **5 × 3 = 15** **3 × 5 = 15**
9.	Zahid says if he multiplies an odd number by an odd number, the answer will be even. What do you think? Back up your answer with evidence.
	1 × 1 = 1 **3 × 3 = 9** **5 × 5 = 25** **7 × 7 = 49** **1 × 3 = 3**

	3 × 5 = 15 **5 × 7 = 35** **Zahid is incorrect. If an odd number is multiplied by another odd number, the answer is always odd.**
10.	How can I get an odd answer when I multiply? Explore, and explain your thinking.
	Let's explore odd × odd, odd × even and even × even 1) odd × odd: 1 × 3 = 3, 5 × 5 = 25, 1 × 3 = 3, 3 × 5 = 15, 5 × 7 = 35 This gives an odd answer each time. 2) even × odd: 2 × 1 = 2, 2 × 3 = 6, 2 × 5 = 10, 4 × 3 = 12, 6 × 5 = 30 This gives an even answer each time. 3) even × even: 2 × 2 = 4, 2 × 4 = 8, 4 × 4 = 16, 4 × 6 = 24, 6 × 8 = 48 This gives an even answer each time. So, to get an odd answer when I multiply, both numbers (factors) must be odd

11.	How quickly can you finish this pattern? 1 × 5 = 5 2 × 5 = 10 Can you also say the facts as divisions?		
	3 × 5 = 15 **4 × 5 = 20** **5 × 5 = 25** **6 × 5 = 30** **7 × 5 = 35** **8 × 5 = 40** **9 × 5 = 45** **10 × 5 = 50** **11 × 5 = 55** **12 × 5 = 60**	**15 ÷ 5 = 3** **20 ÷ 5 = 4** **25 ÷ 5 = 5** **30 ÷ 5 = 6** **35 ÷ 5 = 7** **40 ÷ 5 = 8** **45 ÷ 5 = 9** **50 ÷ 5 = 10** **55 ÷ 5 = 11** **60 ÷ 5 = 12**	**15 ÷ 3 = 5** **20 ÷ 4 = 5** **25 ÷ 5 = 5** **30 ÷ 6 = 5** **35 ÷ 7 = 5** **40 ÷ 8 = 5** **45 ÷ 9 = 5** **50 ÷ 10 = 5** **55 ÷ 11 = 5** **60 ÷ 12 = 5**